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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/538,511	06/09/2005	Keun-Kyu Song	21C-0329	3156
23413 7590 06/11/2008 CANTOR COLBURN, LLP 20 Church Street 22nd Floor Hartford, CT 06103				
EXAMINER				
ULLAH, ELIAS				
ART UNIT		PAPER NUMBER		
2892				
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06/11/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/538,511

Applicant(s)

SONG ET AL.

Examiner

ELIAS ULLAH

Art Unit

2892

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 February 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 1-3 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 16-18 is/are allowed.
- 6) ☒ Claim(s) 4-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
- Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

This office action is in response to an amendment filed on 2/22/2008.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 4-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Muraoka (Muraoka, US 6,699,330) in view of Akino et al. (Akino, US 2002/0132451).

With regard to claims 4, 11 and 13-15, Muraoka teaches forming a photoresist pattern including novolak on a layer (col. 16, lines 35-45) formed on a substrate 56 (Example 13 in col. 15); and removing the photoresist pattern using a stripping composition including an acetic acid and an ozone gas included in the acetic acid in the form of a bubble (col. 16, lines 45-65) and the photoresist pattern is removed using the

stripping composition after etching first and second gate wiring layer using an etching gas and gas comprises a chlorine gas.

Muraoka fails to teach etching the layer using the photoresist pattern using as a mask and the layer comprises a gate layer having a first gate wiring and second gate wiring layer.

Akino teaches etching the layer using the photoresist pattern using as a mask and the layer comprises a gate layer having a first gate wiring and second gate wiring layer (Fig. 4B) and the photoresist pattern is removed using the stripping composition after etching first and second gate wiring layer using an etching gas and gas comprises a chlorine gas [0076]. At the time the invention was made; it would have been obvious to a person having ordinary skill in the art to use "etching a layer using the photoresist as a mask" teaching of Akino in the forming a pattern of Muraoka because a photoresist as mask is used as mask to selectively etching a dielectric layer as taught by Akino in [0058].

With regard to claim 5, Muraoka teaches the stripping composition is prepared by bubbling the ozone gas in the acetic acid (col. 16, lines 45-60).

With regard to claims 6 and 10, Muraoka does not disclosed specific concentration of the ozone gas and acetic acid and pH of the stripping is about 1.6 to about 5.

However, differences in processing parameters or concentration or temperature or ratio will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such ratio or temperature is critical. Where there

general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation See MPEP 2144.05. Furthermore, it would have been obvious to one of ordinary skill in the art at the time of invention was made to determine through routine experimentation the optimum (ratio, pressure, temperature, etc.) based upon a variety of factors including ratio of paste containing acid higher than that of a material for the flux provided a conductive material and such limitation would not lend patentability to the instant application absent a showing of unexpected results.

With regard to claim 7, Muraoka teaches the removing the photoresist pattern by spraying the stripping composition onto the photoresist pattern to wet the photoresist pattern and rinsing the photoresist pattern (col. 16, lines 45-60).

With regard to claim 8, Muraoka teaches the photoresist pattern is rinsed using water (col. 17, lines 1-5).

With regard to claim 9, Muraoka teaches moving the substrate in a first direction during spraying the stripping composition onto the photoresist pattern and moving the substrate in a second direction opposed to the during spraying the stripping composition onto photoresist pattern (col. 16, lines 45-65).

3. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Muraoka and Akino et al. as applied to claim 1-11 above, and further in view of Mei et al.

With regard to claim 12, Muraoka and Akino fail to teach the gate layer comprises a Cr and an Al layer.

Mei teaches the gate layer comprises a Cr and an Al layer (Fig. 11, 506). At the time the invention was made; it would have been obvious to a person having ordinary skill in the art to use "a gate layer comprise a Cr and an Al layer" teaching of Mei in the forming an pattern of Muraoka and Akino, because a material such as Cr and Al is used for a floating gate structure for a tunneling device as taught by Mei in (Fig. 11, 506).

Allowable Subject Matter

4. Claims 16-18 are allowed. The reason for allowance was noted in the office action mailed on 10/26/2007.

Response to Arguments

5. Applicant's arguments with respect to claims 4-15 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ELIAS ULLAH whose telephone number is (571)272-1415. The examiner can normally be reached on weekdays, between 8AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thao Le can be reached on (571) 272-1708. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Elias Ullah/
Examiner, Art Unit 2892

/Thao X Le/
Supervisory Patent Examiner, Art
Unit 2892